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FEDERAL - STATE - PRIVATE  
COOPERATIVE SNOW SURVEYS

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MAY 12 1966

CURRENT SERIAL RECORDS

**WATER SUPPLY OUTLOOK**  
and  
**FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS**  
for  
**WASHINGTON**

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE.  
and  
DEPARTMENT of CONSERVATION STATE of WASHINGTON

Data included in this report were obtained by the agencies named above in cooperation with the U.S. Forest Service, U.S. Geological Survey, National Park Service, and other Federal, State and private organizations.

AS OF  
**APR. 1, 1966**



# UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

## To Recipients of Water Supply Outlook Reports:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data or reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

### PUBLISHED BY SOIL CONSERVATION SERVICE

<u>REPORTS</u>	<u>ISSUED</u>	<u>LOCATION</u>	<u>COOPERATING WITH</u>
<b>RIVER BASINS</b>			
WESTERN UNITED STATES _____	MONTHLY (FEB.-MAY) _____	PORTLAND, OREGON _____	ALL COOPERATORS
BASIC DATA SUMMARY _____	OCTOBER 1 _____	PORTLAND, OREGON _____	ALL COOPERATORS
<b>STATES</b>			
ALASKA _____	MONTHLY (MAR.-MAY) _____	PALMER, ALASKA _____	ALASKA S.C.D.
ARIZONA _____	SEMI-MONTHLY _____ (JAN.15 - APR.1)	PHOENIX, ARIZONA _____	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
GOLORADO AND NEW MEXICO _____	MONTHLY (FEB.-MAY) _____	FORT COLLINS, COLORADO _____	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO _____	MONTHLY (JAN.-JUNE) _____	BOISE, IDAHO _____	IDAHO STATE RECLAMATION ENGINEER
MONTANA _____	MONTHLY (JAN.-JUNE) _____	BOZEMAN, MONTANA _____	MONT. AGR. EXP. STATION
NEVADA _____	MONTHLY (JAN.-MAY) _____	RENO, NEVADA _____	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON _____	MONTHLY (JAN.-JUNE) _____	PORTLAND, OREGON _____	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH _____	MONTHLY (JAN.-JUNE) _____	SALT LAKE CITY, UTAH _____	UTAH STATE ENGINEER
WASHINGTON _____	MONTHLY (FEB.-JUNE) _____	SPOKANE, WASHINGTON _____	WN. STATE DEPT. OF CONSERVATION
WYOMING _____	MONTHLY (FEB.-JUNE) _____	CASPER, WYOMING _____	WYOMING STATE ENGINEER

### PUBLISHED BY OTHER AGENCIES

<u>REPORTS</u>	<u>ISSUED</u>	<u>AGENCY</u>
BRITISH COLUMBIA _____	MONTHLY (FEB.-JUNE) _____	WATER RESOURCES SERVICE, DEPT. OF LANDS, FOREST AND WATER RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA _____	MONTHLY (FEB.-MAY) _____	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.

FEDERAL-STATE-COOPERATIVE  
SNOW SURVEY AND WATER SUPPLY FORECASTS

For  
WASHINGTON

Report Prepared  
By

Robert T. Davis, Snow Survey Supervisor

Soil Conservation Service  
840 Bon Marche Building  
Spokane, Washington

Issued By

Orlo W. Krauter  
State Conservationist  
Soil Conservation Service  
U. S. Department of Agriculture

Murray G. Walker, Supervisor  
Division of Water Resources  
Department of Conservation  
State of Washington

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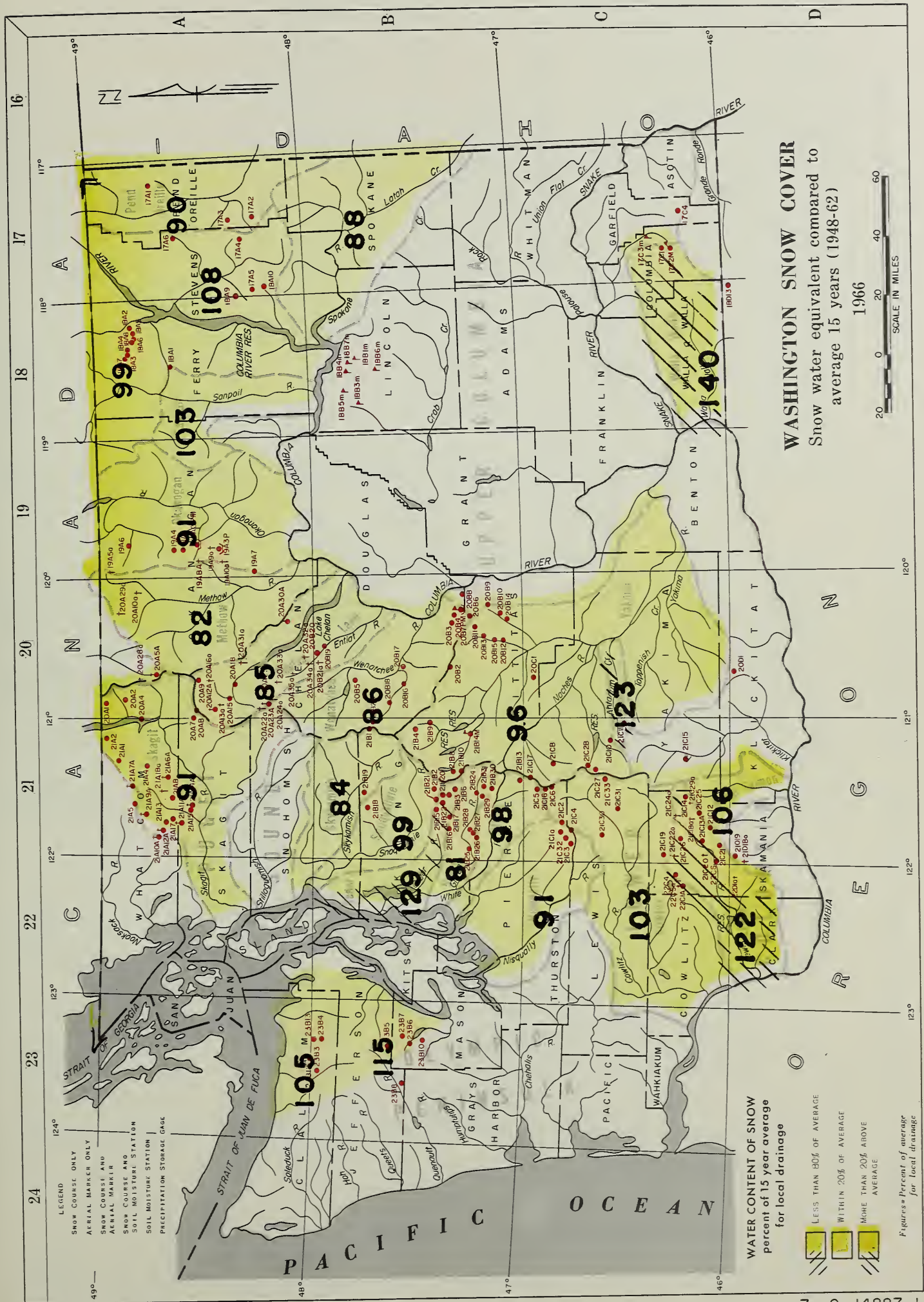
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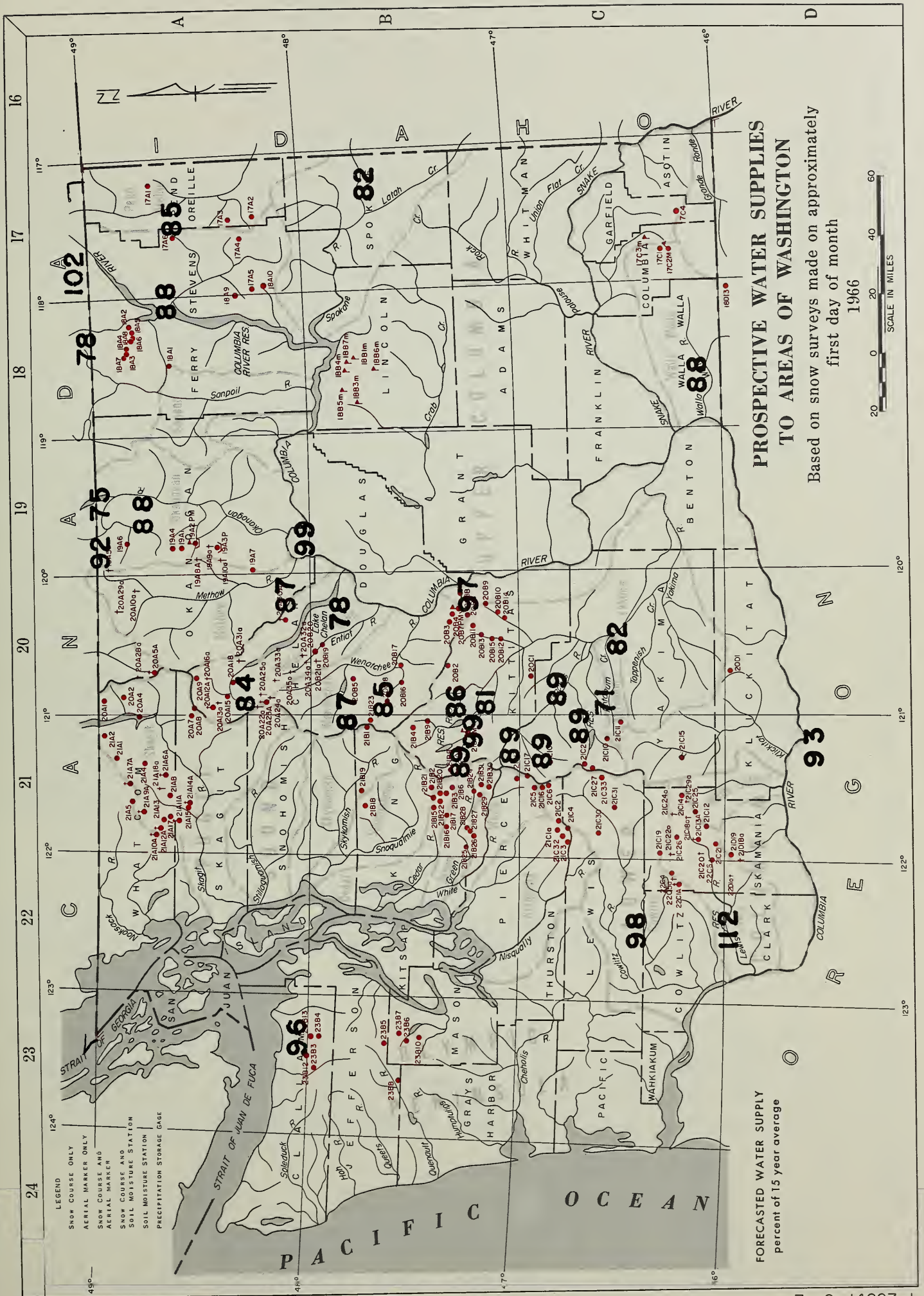




INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.		
UPPER COLUMBIA DRAINAGE																			
Pend Oreille River																			
Boyer Mountain	17A2	7	31N	43E	5250	Squillechuck Creek													
Bunchgrass Meadow	17A1	24	37N	44E	5000	20B3	12	21N	19E	4400	Lewis River (continued)								
Winchester Creek	17A3	30	33N	43E	4970	20B4	18	21N	20E	3400	22C1a	35	9N	5E	4400	Skagit River (continued)			
Kettle River																			
Boulder Road	18A2	36	39N	36E	1450	Stemilt Creek													
Butte Creek	18A3	28	39N	35E	1070	20B7PM	30	21N	20E	4400	21C21a	16	8N	6E	2100	Freezout Creek Trail			
Cabin Creek	18A8	5	38N	30E	3170	Crab Creek													
Coat Creek	18A4	26	39N	35E	3595	18B1m	32	27N	34E	2440	21C31	21	13N	10E	2200	Freezout Meadows			
Snow Caps Creek	18A5	3	38N	36E	2150	18B2m	28	27N	33E	2420	21C32	28	15N	10E	2200	Lake Hazen			
Snow Caps Trail	18A6	5	38N	36E	2720	18B5m	17	27N	32E	2378	21C33	11	13N	10E	2870	Mount Blum			
Summit U. S.	18A7	20	39N	35E	4600	18B7m	24	25N	32E	2250	21C34	36	10N	10E	4500	Rocky Creek			
Colville River																			
Baird	17A6	19	36N	42E	3215	Yakima River													
Carlson	18A9	34	32N	38E	2885	21C11	26	12N	14E	3100	21C19	15	16N	10E	5300	Schreibers Meadow			
Chevelah	17A4	11	32N	41E	4925	21B1	35	23N	14E	3200	21C20	33	10N	7E	4100	S. F. Thunder Creek			
Stranger Mountain	17A5	26	31N	38E	4990	21C8	23	16N	12E	3450	21C32	28	15N	10E	2200	Sulphur Creek			
Togo	18A10	6	29N	38E	3370	20B9	25	20N	20E	5370	21C33	21	13N	10E	2200	Three Mile Creek			
Sanpoil River																			
Sherman Creek Pass	18A1	19	36N	35E	5350	20B10	17	19N	20E	4123	21C34	36	10N	10E	4500	Watson Lakes			
Okanogan River																			
Clark	19A8a	2	36N	23E	7000	21C10	3	12N	13E	6000	21C35	3	13N	8E	3250	Panorama			
Nuckamuck	19A9a	20	36N	24E	6750	20B11	29	21N	19E	5385	21C36	3	13N	8E	3250				
Mutton Creek No. 1	19A1	30	37N	24E	5700	20B12	34	20N	19E	2930	White River								
Mutton Creek No. 2	19A2	11	37N	24E	6000	21B14M	15	20N	14E	2200	21B13	30	18N	11E	6000			Deer Park	
Paydayten	20A28a	32	40N	18E	4300	20C1	23	15N	8E	4550	21C5	4	16N	10E	3600	Morse Creek			
Rusty Creek	19A3P	18	35N	24E	4000	20B13	4	20N	19E	3875	21C16	4	16N	10E	3400	Deer Park G. S.			
Salmon Meadows	19A2PM	33	37N	24E	4500	20B14	13	21N	11E	2450	Green River								
Starvation Mtn.	19A10a	15	35N	23E	6750	20B15	22	20N	19E	3360	21B24	18	20N	11E	1800			Hurricane	
Touts Coulee	19A6	30	39N	25E	2845	21C28	2	13N	11E	4500	21B25	27	21N	8E	1200			Skokomish River	
Methow River																			
Billy Goat Pass	20A10a	10	38N	20E	6400	21C27	1	13N	11E	4500	21B26	21	20N	8E	4000			Black and White	
Dollar Watch	20A29a	8	39N	20E	7000	LOWER COLUMBIA DRAINAGE													
Harts Pass	20A5a	7	37N	18E	6500													Asotin Creek	
Horseshoe Basin	19A5a	15	40N	23E	7000	Spruce Springs	17C4	9	8N	42E	5700	21B27	14	20N	8E	2100	Black and White		
Loup Loup	19A7	36	34N	23E	4650	Klickitat River													
Chelan Lake Basin																			
Bridge Creek	20A15	20	34N	16E	2100	Couse	17C3m	2	9N	35E	3370	21B28	12	20N	8E	2100	Four Stream		
Bullion	20A18	2	33N	16E	1460	Homestead	17C1	11	9N	40E	4030	21B29	36	20N	10E	3100	Home Sweet Home		
Cloudy Pass-	20A22a	12	31N	15E	6500	Martin Springs (Helmets SW)	17C2M	23	9N	40E	4400	21B30	18	19N	11E	4100	Sundown Pass		
Greenwood Flat	20A25a	3	31N	16E	3540	Walla Walla Diversion	18D13	22	6N	38E	2400	Cedar River							
Little Meadows	20A24a	8	31N	16E	5275	Klickitat River													
Lyman Lake	20A23a	18	31N	16E	5900	Satus Pass	20D1	21	6N	17E	4030	21B3	10	21N	10E	2390	Black and White		
Park Creek Flat	20A13a	18	34N	16E	2220	West Fork Cabin	21C15	23	9N	12E	3000	21B21	30	22N	10E	3300	Black and White		
Park Creek Ridge	20A12a	7	34N	16E	4600	Cultus Creek	21C12	35	7N	8E	4000	21B22	31	22N	10E	2500	Home Sweet Home		
Petersons	20A16a	3	34N	17E	3730	Lewis River													
Rainy Pass	20A9	21	35N	17E	4780	Blue Lake	21C22a	19	9N	8E	4800	21B16	31	22N	9E	2500	Sundown Pass		
Safety Harbor	20A30a	32	31N	20E	6300	Bob's Trail	21C21	25	8N	7E	2200	21B17	11	21N	9E	2400			
War Creek Pass	20A31a	34	33N	18E	6500	Calamity Ridge	22D1a	8	5N	5E	2500	21B20	1	21N	10E	3400			
Entiat River																			
Brief	20B19	34	28N	19E	1600	Council Pass	21C18a	24	9N	9E	4200	Snoqualmie River							
Entiat Meadows	20A33a	28	31N	17E	4800	Divide Meadow	21C29a	21	9N	10E	5600	21B2	19	22N	11E	3625	Aerial Marker Only		
Entiat River Trail	20A34a	2	29N	17E	3150	Grand Meadow	21C25	28	8N	9E	3500	21B18	26	26N	9E	1900	Snow Course and Aerial Marker		
Pope Ridge	20B20	22	29N	18E	4300	Lone Pine Shelter	21C26	8	9N	7E	3800	21B19	33	26N	10E	2900	Snow Course and Soil Moisture Station		
Pugh Ridge	20A32a	34	30N	18E	6400	Marble Mountain	22C5a	36	8N	5E	3200	Skagit River							
Snow Brushy	20A35a	21	30N	17E	3850	New Muddy River	22C6	34	8N	6E	2000	21A4	35	39N	12E	2200	Soil Moisture Station		
Tongue Creek	20B21a	10	28N	18E	5300	Oldman Pass	21D19	22	6N	7E	3100	21A1	9	39N	12E	3680	Precipitation Storage Gage		
Wenatchee River																			
Berne-Mill Creek	21B23	7	26N	15E	2925	Snoqualmie River													
Blawett Pass No. 2	20B2	35	22N	17E	4270														
Chiwaukum G. S.	20B16	4	25N	17E	1810														
Lake Wenatchee	20B5	33	27N	17E	1970														
Leavenworth R. S.	20B17	1	24N	17E	1127														
Levenworth R. S.	20B18	4	26N	16E	2140														
Levenworth R. S.	20B19	14	26N	13E	4070														
Stevens Pass	21B1	14	26N	13E	4070														
LEGEND																			
NUMBERING SYSTEM EXAMPLE																			
21A7 SHOW COURSE ONLY																			
21A7a AERIAL MARKER ONLY																			
21A7a SHOW COURSE AND AERIAL MARKER																			
21A7m SHOW COURSE AND SOIL MOISTURE STATION																			
21A7m SHOW COURSE AND SOIL MOISTURE STATION																			
21A7m SHOW COURSE AND SOIL MOISTURE STATION																			





INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Boyer Mountain	17A2	7	31N	47E	5250
Bunchgrass Meadow	17A1	24	17N	44E	5000
Winchugras Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	30N	36E	1450
Butte Creek	18A3	24	30N	35E	4070
Cabin Creek	18A4	5	38N	36E	3170
Goat Creek	18A5	26	38N	35E	3595
Snow Caps Creek	18A6	5	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	30N	35E	4600
Calville River					
Baird	17A5	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chevelah	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4900
Togo	18A10	6	20N	38E	3370
Sanpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Nuckamuck	19A8b	20	36N	24E	6750
Mutton Creek No. 1	19A9	30	37N	24E	5700
Mutton Creek No. 2	19A1	10	37N	24E	6000
Physayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4500
Salmon Meadows	19A2FM	33	37N	24E	4000
Starvation Mtn.	19A2FM	33	37N	24E	4000
Touts Coulee	19A10a	15	35N	23E	6750
	19A0	30	39N	25E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dollar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A5A	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loup	19A7	36	34N	23E	4650
Chelan Lake Basin					
Bridge Creek	20A15	20	34N	16E	2100
Bullion	20A18	2	33N	16E	1460
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	5900
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23a	18	31N	16E	5900
Park Creek Flat	20A13a	18	34N	16E	2220
Park Creek Ridge	20A12a	7	34N	16E	4600
Petersons	20A16a	3	34N	17E	3730
Rainy Pass	20A9	21	35N	17E	4780
Safety Harbor	20A30A	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Entiat River					
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4800
Entiat River Trail	20A34a	2	29N	17E	3150
Pope Ridge	20B20	22	29N	18E	4300
High Ridge	20A32a	34	30N	18E	6400
Snow Brushy	20A35a	21	30N	17E	3850
Tommy Creek	20B21a	10	28N	18E	5300
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	2925
Blavett Pass No. 2	20B2	35	22N	17E	4270
Chitaukum G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Herritt	20B18	4	26N	16E	2140
Stevens Pass	21B1	14	26N	13E	4070
Lewis River (continued)					
Plains of Abraham	22C1a	35	9N	5E	4400
Smith Creek Road	22C2a	29	9N	6E	2100
Spencer Meadow	21C20a	16	8N	7E	3400
Surprise Lakes	21C13a	14	7N	8E	4250
Table Mountain	21C24a	20	9N	9E	4200
Timbered Peak	21D18a	36	6N	6E	3000
Cowlitz River					
Cayuse Pass	21C6	15	16N	10E	5300
Mosquito Meadows	21C19	33	10N	7E	4100
Pachnawood Lake	21C32	28	15N	10E	2200
Ohannapoh	21C31	21	13N	10E	2870
Pigtail Peak	21C33	11	13N	11E	5900
Potato Hill	21C14	36	10N	10E	4500
Willame Creek	21C30	3	13N	8E	3250
White River					
Corral Pass	21B13	30	18N	11E	6000
White River Entrance	21C15	4	16N	10E	3600
White River Entrance (new)	21C16	4	16N	10E	3400
Green River					
Airstrip	21B24	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Grass Mountain No. 1	21B26	21	20N	8E	4000
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Sawmill Ridge	21B31	5	19N	11E	4700
Stampede Pass	21B10	25	21N	11E	3000
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner Aux.	21B21	30	22N	10E	3300
Mt. Gardner	21B22	31	22N	10E	2500
Mt. Lindsay	21B16	31	22N	9E	2500
Mt. Washington	21B15	8	22N	9E	3000
Rex River	21B17	11	21N	9E	2400
South Fork Cedar	21B6	24	21N	10E	3000
Tinkham Creek	21B20	1	21N	10E	3400
Snoqualmie River					
Ollalie Meadows	21B2	19	22N	11E	3625
South Fork Tolt	21B18	26	26N	9E	1900
Skykomish River					
Lake Elizabeth	21B19	33	26N	10E	2900
Skagit River					
Beaver Creek Trail	21A4	35	39N	12E	2200
Beaver Pass	21A1	9	39N	12E	3680
Devils Park	20A4	34	38N	16E	5900
Skagit River (continued)					
Freezeout Creek Trail	20A1	14	40N	14E	3500
Freezeout Meadows	20A2	19	40N	14E	5000
Lake Hozomeen	21A2	29	40N	14E	1900
Meadows Cabins	20A7	15	35N	14E	4200
Thunder Basin	20A7	15	35N	14E	4200
Baker River					
Dock Butte	21A11a	8	36N	8E	3800
Fazy Pass	21A7a	19	39N	11E	5200
Jasper Pass	21A6a	17	38N	11E	5400
Marten Lake	21A9a	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Mount Creek	21A12a	40	37N	8E	2100
Schreibers Meadow	21A10a	18	37N	8E	3400
S. F. Thunder Creek	21A14a	20	36N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8	25	37N	9E	4500
Nooksack River					
Panorama	21A5	17	39N	9E	4300
OLYMPIC PENINSULA					
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Deer Park G. S.	23B13	1	28N	5W	4850
Morse Creek	23B12	25	29N	7W	5425
Elwha River					
Hurricane	23B3	36	29N	7W	4500
Skokomish River					
Black and White	23B7	17	24N	5W	4200
Black and White Lakes	23B6	16	24N	5W	4700
Four Stream	23B10	1	23N	6W	3000
Home Sweet Home	23B5	28	23N	5W	5200
Sundown Pass	23B8	25	24N	7W	3900

LEGEND  
NUMBERING SYSTEM EXAMPLE

21A7 SNOW COURSE ONLY

21A7a AERIAL MARKER ONLY

21A7a SNOW COURSE AND AERIAL MARKER

21A7m SNOW COURSE AND SOIL MOISTURE STATION

21A7m SOIL MOISTURE STATION

21A7P SNOW COURSE AND PRECIPITATION STORAGE GAGE

21A7P PRECIPITATION STORAGE GAGE



## WATER SUPPLY OUTLOOK

State of Washington  
April 1, 1966

\*\*\*\*\*  
\* The water supply outlook for irrigation and power in Washington \*  
\* and tributary streams should be adequate during the 1966 runoff \*  
\* season. Snowfall during March was greater than normal but not \*  
\* enough to overcome the deficits of last month. Runoff over the \*  
\* State continued to be generally below normal with a few stations \*  
\* indicating above normal flows during the month of March but the \*  
\* runoff situation was greatly improved over that which occurred \*  
\* during the previous month. Snow cover on the Washington mountains \*  
\* varied from a high of 40% above normal to a low of 19% below--an \*  
\* improvement of nearly 5% of that which was reported last month. \*  
\* This pack continues to vary greatly with elevations, the better \*  
\* percentages occurring in the lower regions. Soil mantles contin- \*  
\* ue to be drier than normal but improved over last month. Reser- \*  
\* voirs still have below average amounts of water in storage but the \*  
\* major reservoirs are expected to fill with the spring runoff. The \*  
\* overall outlook has improved slightly over that which was reported \*  
\* March 1. \*  
\*\*\*\*\*

### SNOW COVER

Most of the watersheds east of the Cascade Mountains have very close to normal amounts of water in the snowpack as of April 1. The low elevation watershed of Ahtanum Creek, tributary to the Yakima River, having the greatest amount in this area and the Methow River having the least. On the Lower Columbia drainage portion the snow cover is above normal, ranging from 40% above normal for Mill Creek, tributary of the Walla Walla River, to 3% above for the Cowlitz River. Puget Sound drainages vary from 19% below normal on the Green River to 29% above for the Cedar River. A complete picture of the Olympic Peninsula is not available because heavy snow storms during the last week of March created avalanche problems which the snow surveyors did not dare try to overcome. The Elwha snow cover increased to 5% above normal while the Skokomish increased to 15% above.

### RESERVOIRS

As reported last month all of the reservoirs in the Columbia Basin in Washington have below average amounts of water in storage. Conconully Reservoir on Salmon Creek, tributary to the Okanogan River, has now started to fill but unless well above normal precipitation occurs this reservoir will not fill in 1966.





## PRECIPITATION

March precipitation over Washington and adjacent areas varies from 37% below normal to 36% above with most of the State experiencing rain fall near average. Fall precipitation was 40% of normal and winter precipitation between 68% and 88%.

## SOIL MOISTURE

A general overall improvement in the soil moisture conditions of the watersheds was experienced during the month of March. Crab Creek, measured by five stations is now 68% of capacity and 4% greater than last year. The Okanogan watershed is 47% of capacity and 81% of last year. The Wenatchee watershed, measured by one station is 71% of capacity and 87% of last year. In the south-east portion of the State two stations in the Walla Walla drainage are 66% of capacity and 68% of 1965.

## STREAMFLOW

During the month of March streamflow as reported by the United States Geological Survey was near normal, varying from 46% below to 47% above. Forecasts of streamflows for the rivers in Washington and tributary basins indicate seasonal streamflows are expected to be from 28% below normal to 12% above. The main stem of the Columbia River had a slight decrease in forecasted flow from that which was reported last month while the other streams within the State all had improved percentages. Numerical forecasts for the April-September, April-July and April-June periods can be found on the following pages for all major river gages forecasted in the State of Washington.

During the winter of 1881-1882 the following were the principal  
 points of interest in the history of the country. The  
 first of these was the discovery of gold in the  
 mountains of the Sierra Nevada. This discovery was made  
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# STREAMFLOW FORECASTS - APRIL 1966

The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts.

Basin, Stream and Station	Forecast Runoff 1965	Seasonal Streamflow in Thousand of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast Period	Measured 1965	Runoff 1964	Runoff 1963	15-Yr. Average 1948-62
<u>COLUMBIA BASIN</u>							
<u>Columbia River System</u>							
<u>Columbia River</u>							
at Birchbank <u>1/</u>	46000	102	Apr-Sep	43105	45907	41044	45029
	36500	103	Apr-Jul	32803	35860	31415	35518
	26500	106	Apr-Jun	23052	23138	21909	24985
<u>Columbia River</u>							
at Grand Coulee <u>1/</u>	69500	99	Apr-Sep	69626	70512	57725	70253
	59300	101	Apr-Jul	56879	58420	46726	58921
	45500	100	Apr-Jun	44465	42575	35080	45486
<u>Columbia River</u>							
bl. Rock Island Dam <u>1/</u>	75200	97	Apr-Sep	74987	77192	62458	77312
	63400	98	Apr-Jul	61760	64116	50902	64967
	49400	98	Apr-Jun	48046	46500	38455	50178
<u>Columbia River</u>							
at The Dalles, Ore. <u>1/</u>	101200	93	Apr-Sep	112902	110401	86967	108696
	85500	92	Apr-Jul	95012	93375	71820	92527
	69000	93	Apr-Jun	76940	71485	56310	74282
<u>Pend Oreille River System</u>							
<u>Pend Oreille River</u>							
bl. Box Canyon	14350	85	Apr-Sep	--	17542	11762	16905
	13100	84	Apr-Jul	--	15990	10741	15571
	11000	82	Apr-Jun	--	13518	9144	13399
<u>Kettle River System</u>							
<u>Kettle River</u>							
nr. Laurier	1600	78	Apr-Sep	1881	2022	1394	2051
	1520	78	Apr-Jul	1782	1796	1333	1952
	1370	77	Apr-Jun	1678	1580	1193	1774

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.





# Streamflow Forecasts - April 1966 (Cont.)

Basin, Stream and Station	Forecast Runoff 1966	Seasonal Streamflow in Thousands of Acre-Feet					
		%	Fore-				15-Yr.
		15-Yr. Avg.	cast Period	Measured 1965	1964	Runoff 1963	Average 1948-62
<u>Chelan River System (Cont.)</u>							
Stehekin River							
at Stehekin	790	84	Apr-Sep	--	949	698	943
	680	84	Apr-Jul	--	815	578	810
	530	86	Apr-Jun	--	578	459	617
<u>Wenatchee River System</u>							
Wenatchee River							
at Plain	1220	87	Apr-Sep	--	1469	860	1397
	1120	88	Apr-Jul	--	1295	770	1267
	910	90	Apr-Jun	--	924	653	1013
Wenatchee River							
at Peshastin	1630	85	Apr-Sep	1751	1951	1166	1924
	1500	85	Apr-Jul	1604	1735	1050	1758
	1240	88	Apr-Jun	1326	1252	895	1415
Stemilt Basin							
nr. Wenatchee	125*	--	May-Sep	132*	146	138*	--
<u>Yakima River System</u>							
Yakima River							
nr. Martin <u>5/</u>	140	89	Apr-Sep	132	203	75	158
	130	89	Apr-Jul	126	182	70	146
	115	91	Apr-Jun	115	138	64	126
Yakima River							
at Cle Elum <u>6/</u>	850	81	Apr-Sep	--	1254	576	1046
	790	82	Apr-Jul	--	1127	516	962
	700	84	Apr-Jun	--	888	459	834
Yakima River							
nr. Parker <u>7/</u>	1650	82	Apr-Sep	--	2005	921	2016
	1650	83	Apr-Jul	--	1917	942	1988
	1550	85	Apr-Jun	--	1606	929	1826
Kachess River							
nr. Easton <u>8/</u>	140	99	Apr-Sep	116	176	61	141
	135	101	Apr-Jul	112	161	59	134
	120	102	Apr-Jun	104	128	56	118

\* Thousands of Miners' Inches.

5/ Observed flow corrected for storage in Lake Keechelus.

6/ Observed flow corrected for storage in Keechelus, Kachess and Cle Elum Lakes and diversion by Kittitas Canal.

7/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation and Sunnyside Canals.

8/ Observed flow corrected for storage in Lake Kachess.





# Streamflow Forecasts - April 1966 (Cont.)

Basin, Stream and Station	Forecast Runoff 1966	Seasonal Streamflow in Thousands of Acre-Feet					
		%	Fore-	Measured Runoff			15-Yr.
		15-Yr. Avg.	cast Period	1965	1964	1963	Average 1948-62
<u>Yakima River System (Cont.)</u>							
Cle Elum River							
nr. Roslyn <u>9/</u>	450	86	Apr-Sep	461	577	285	525
	420	87	Apr-Jul	429	520	264	483
	360	88	Apr-Jun	375	401	234	407
Bumping River							
nr. Nile <u>10/</u>	145	89	Apr-Sep	141	167	85	163
	135	89	Apr-Jul	131	150	78	151
	115	92	Apr-Jun	116	109	70	124
American River							
nr. Nile	125	89	Apr-Sep	--	131	84	140
	115	88	Apr-Jul	--	120	77	130
	100	92	Apr-Jun	--	90	67	108
Tieton River							
at Tieton Dam <u>11/</u>	250	89	Apr-Sep	230	235	171	280
	215	89	Apr-Jul	205	201	141	241
	175	91	Apr-Jun	173	146	121	193
Naches River							
nr. Naches <u>12/</u>	880	89	Apr-Sep	--	914	586	991
	810	89	Apr-Jul	--	818	524	908
	700	90	Apr-Jun	--	642	466	776
Ahtanum Creeks							
nr. Tampico <u>13/</u>	39	71	Apr-Sep	--	35	38	55
	35	69	Apr-Jul	--	31	35	51
	32	71	Apr-Jun	--	26	31	45
<u>Lower Columbia River System</u>							
Mill Creek							
nr. Walla Walla	30	88	Apr-Sep	--	34	20	34
	26	87	Apr-Jul	--	31	17	30
	23	85	Apr-Jun	--	28	15	27
Lewis River							
at Ariel <u>14/</u>	1620	112	Apr-Sep	--	1451	1119	1450
	1450	113	Apr-Jul	--	1233	1000	1286
	1290	113	Apr-Jun	--	1053	909	1140
Cowlitz River							
at Castle Rock <u>15/</u>	2900	98	Apr-Sep	--	3330	2221	2954
	2580	98	Apr-Jul	--	2884	1944	2620
	2180	97	Apr-Jun	--	2338	1711	2244

9/ Observed flow corrected for storage in Lake Cle Elum.

10/ Observed flow corrected for storage in Bumping Lake.

11/ Observed flow corrected for storage in Rimrock Lake.

12/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals and City of Yakima.

13/ Observed flow of North and South Forks (combined).

14/ Observed flow corrected for storage in Lake Merwin, Yake and Swift Reservoirs

15/ Observed flow corrected for storage in Mayfield Reservoir.





Streamflow Forecasts - April 1966 (Cont)

Basin, Stream and Station	Forecast Runoff 1966	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast Period	Measured Runoff			15-Yr. Average
				1965	1964	1963	

OLYMPIC PENINSULA

Dungeness River System

Dungeness River

nr. Sequim	170	96	Apr-Sep	--	159	134	178
	140	95	Apr-Jul	--	132	106	147
	110	99	Apr-Jun	--	95	79	111

W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
W. Fork Dungeness	110 - 140	99 - 100	Apr-Jun	--	95	79	111
W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
W. Fork Dungeness	110 - 140	99 - 100	Apr-Jun	--	95	79	111
W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
W. Fork Dungeness	110 - 140	99 - 100	Apr-Jun	--	95	79	111
W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178

W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
W. Fork Dungeness	110 - 140	99 - 100	Apr-Jun	--	95	79	111
W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
W. Fork Dungeness	110 - 140	99 - 100	Apr-Jun	--	95	79	111
W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
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W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
W. Fork Dungeness	110 - 140	99 - 100	Apr-Jun	--	95	79	111
W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
W. Fork Dungeness	110 - 140	99 - 100	Apr-Jun	--	95	79	111
W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178

W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
W. Fork Dungeness	110 - 140	99 - 100	Apr-Jun	--	95	79	111
W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
W. Fork Dungeness	110 - 140	99 - 100	Apr-Jun	--	95	79	111
W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178
W. Fork Dungeness	140 - 170	95 - 97	Apr-Jul	--	132	106	147
W. Fork Dungeness	110 - 140	99 - 100	Apr-Jun	--	95	79	111
W. Fork Dungeness	170 - 200	96 - 98	Apr-Sep	--	159	134	178

\* Measured at long gauge (1) unless noted otherwise.



# COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about April 1, 1966 as per cent of the same date in 1965 and 1964 and average of record.

Tributary Basin	No. of Courses Average	Years of Record	1966 1965	Snow Water Expressed as per cent of 1964	1948-62 Average
<u>UPPER COLUMBIA BASIN</u>					
Pend Oreille	13 - 15	2 - 29	89	85	90*
Kettle	3 - 11	3 - 28	74	78	99*
Colville	1 - 5	4 - 8	82	81	108*
Spokane	13 - 17	2 - 29	84	81	88*
Sanpoil	1	27	98	111	103
Okanogan	26 - 35	1 - 31	94	84	91*
Methow	1 - 5	5 - 24	101	87	82*
Chelan	3 - 4	3 - 34	88	79	85
Wenatchee	3 - 9	5 - 34	87	75	86
Yakima	14 - 23	4 - 47	105	87	96*
Ahtanum	2	16 - 17	129	108	123*
<u>LOWER COLUMBIA BASIN</u>					
Mill Creek	3	9 - 11	134	109	140*
Klickitat	2	9 - 11	164	205	--
White Salmon	2	21 - 22	114	100	106*
Cowlitz	4 - 9	3 - 26	106	88	103*
Lewis	5 - 16	5 - 22	143	116	122*
<u>PUGET SOUND</u>					
Nisqually	3	16	97	71	91*
White	3	10 - 26	107	89	98*
Green	1 - 9	5 - 20	99	73	81*
Cedar	5 - 7	7 - 18	119	88	129*
Snoqualmie	1 - 3	8 - 21	104	79	99
Skykomish	1 - 2	8 - 21	81	111	84
Skagit	14	15 - 34	97	83	91*
Baker	11	6 - 9	119	91	--
Nooksack	1	9	132	128	--
<u>OLYMPIC PENINSULA</u>					
Skokomish	3 - 5	2 - 16	162	110	115*
Elwha	1	16	148	93	105*

\* Records of less than 15 years used in computation of average





# SOIL MOISTURE - APRIL

Drainage Basin and Station	Number	Elev.	Profile (Inches):		Soil Moisture Content		
			Depth	Total : Capacity:	(Inches) as of April 1		
					1966	1965	1964
<u>CRAB CREEK</u>							
Creston-Kunz	18B1m	2440	48	13.6	11.3	8.9	10.9
Jack Woods	18B3m	2600	48	13.6	9.9	9.5	9.4
Krause	18B4m	2440	48	13.6	9.8	9.3	10.0
Sheffels	18B5m	2360	48	13.6	7.2	8.2	6.3
Wheatridge	18B6m	2200	48	13.6	8.0	8.5	7.8
<u>OKANOGAN</u>							
Trout Creek	3-M	3600	48	7.3	3.4*	4.2	5.7
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	4.4**	4.8	--
Lake Cle Elum	21B14M	2200	48	12.8	9.0	9.2	9.2
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	7.9	10.6*	9.3
Helmers	17C2M	4400	48	12.0	7.4	12.2*	9.3
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	9.0	10.3	--

\* March 1 measurement

\*\* March 15 measurement

# FALL SOIL MOISTURE

Drainage Basin and Station	Number	Elev.	Profile (Inches)		Soil Moisture Content		
			Depth	Total : Capacity	:(Inches) as of Oct 1		
					1965	1964	1963
<u>CRAB CREEK</u>							
Creston-Kunz	18B1m	2440	48	13.6	4.9	5.4	5.1
Jack Woods	18B3m	2600	48	13.6	5.0	4.4	6.3
Krause	18B4m	2440	48	13.6	5.8	5.9	5.2
Sheffels	18B5m	2360	48	13.6	4.0	3.7	3.7
Wheatridge	18B6m	2200	48	13.6	4.2	4.1	4.5
<u>OKANOGAN</u>							
Trout Creek	3-M	3600	48	7.3	4.1	4.9	4.1
<u>YAKIMA</u>							
Domery Flat	21B20m	2200	48	6.9	1.9	4.4	--
Lake Cle Elum	21B14M	2200	48	12.8	6.9	8.5	6.6
<u>WALLA WALLA</u>							
Couse	17C3m	3650	48	11.1	6.0	5.6	5.7
Helmers	17C2M	4400	48	12.0	6.2	6.0	5.8
<u>WENATCHEE</u>							
Upper Wheeler	20B7M	4400	48	12.7	6.2	5.3	--



# SOIL MONITORING

Location	Number	Depth	Profil/a (meters)	Soil Moisture (%)	Soil Temperature (°C)	Soil pH
1. Greenhouse	1001	0-10	10.0	15.0	15.0	6.5
2. Field	1002	0-10	10.0	15.0	15.0	6.5
3. Field	1003	0-10	10.0	15.0	15.0	6.5
4. Field	1004	0-10	10.0	15.0	15.0	6.5
5. Field	1005	0-10	10.0	15.0	15.0	6.5
6. Field	1006	0-10	10.0	15.0	15.0	6.5
7. Field	1007	0-10	10.0	15.0	15.0	6.5
8. Field	1008	0-10	10.0	15.0	15.0	6.5
9. Field	1009	0-10	10.0	15.0	15.0	6.5
10. Field	1010	0-10	10.0	15.0	15.0	6.5
11. Field	1011	0-10	10.0	15.0	15.0	6.5
12. Field	1012	0-10	10.0	15.0	15.0	6.5
13. Field	1013	0-10	10.0	15.0	15.0	6.5
14. Field	1014	0-10	10.0	15.0	15.0	6.5
15. Field	1015	0-10	10.0	15.0	15.0	6.5
16. Field	1016	0-10	10.0	15.0	15.0	6.5
17. Field	1017	0-10	10.0	15.0	15.0	6.5
18. Field	1018	0-10	10.0	15.0	15.0	6.5
19. Field	1019	0-10	10.0	15.0	15.0	6.5
20. Field	1020	0-10	10.0	15.0	15.0	6.5

Soil Moisture (%) measurement  
Soil Temperature (°C) measurement

# SOIL MONITORING

Location	Number	Depth	Profil/a (meters)	Soil Moisture (%)	Soil Temperature (°C)	Soil pH
1. Greenhouse	1001	0-10	10.0	15.0	15.0	6.5
2. Field	1002	0-10	10.0	15.0	15.0	6.5
3. Field	1003	0-10	10.0	15.0	15.0	6.5
4. Field	1004	0-10	10.0	15.0	15.0	6.5
5. Field	1005	0-10	10.0	15.0	15.0	6.5
6. Field	1006	0-10	10.0	15.0	15.0	6.5
7. Field	1007	0-10	10.0	15.0	15.0	6.5
8. Field	1008	0-10	10.0	15.0	15.0	6.5
9. Field	1009	0-10	10.0	15.0	15.0	6.5
10. Field	1010	0-10	10.0	15.0	15.0	6.5
11. Field	1011	0-10	10.0	15.0	15.0	6.5
12. Field	1012	0-10	10.0	15.0	15.0	6.5
13. Field	1013	0-10	10.0	15.0	15.0	6.5
14. Field	1014	0-10	10.0	15.0	15.0	6.5
15. Field	1015	0-10	10.0	15.0	15.0	6.5
16. Field	1016	0-10	10.0	15.0	15.0	6.5
17. Field	1017	0-10	10.0	15.0	15.0	6.5
18. Field	1018	0-10	10.0	15.0	15.0	6.5
19. Field	1019	0-10	10.0	15.0	15.0	6.5
20. Field	1020	0-10	10.0	15.0	15.0	6.5

# RESERVOIR STORAGE - 1000 Acre Feet

BASIN or STREAM	RESERVOIR	USABLE <u>1/</u> CAPACITY	Measured (April 1)			
			1966	1965	1964	Normal*
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	187.0	118.8	93.5	174.4
Columbia	Franklin D. Roosevelt Lake	5232.0	872.0	2679.0	2426.0	2969.4
Columbia	Banks Lake <u>2/</u>	761.8	481.6	423.4	326.9	505.1
Okanogan	Conconully Reservoir	13.0	0.7	5.2	4.8	8.0
Okanogan	Salmon Lake	10.5	7.6	8.3	9.5	8.9
Chelan	Lake Chelan	676.1	85.3	288.3	131.9	197.9
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	92.9	87.0	70.7	94.4
Kachess	Kachess Lake	239.0	177.1	184.1	151.6	182.4
Cle Elum	Lake Cle Elum	436.9	213.2	337.2	137.2	271.9
Bumping	Bumping Lake	33.7	4.2	6.3	3.3	13.4
Tieton	Rimrock Lake	198.0	92.0	144.6	102.0	129.0
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir <u>2/</u>	1202.9	503.3	817.4	805.0	513.8
Skagit	Diablo Reservoir	90.6	84.2	83.8	84.1	82.1
Skagit	Gorge Reservoir	9.8	7.2	8.4	7.1	--

<sup>1/</sup> Based on Active Storage

<sup>2/</sup> Less than 15-year record in period 1948-62

\* 15-year average 1948-62





# PRECIPITATION <sup>1/</sup>

## Division Averages and Departures

DRAINAGE DIVISIONS	FALL		WINTER		SPRING	
	Sept-Nov. 1965 <sup>2/</sup>	Observed-Departure	Dec. '65-Feb. '66 <sup>2/</sup>	Observed-Departure	March 1966 <sup>2/</sup>	Observed-Departure
Columbia in Canada	6.01	-0.36	9.68	+0.89	1.70	+0.24
Pend Oreille - Spokane	5.44	-3.50	8.94	-3.23	3.82	+1.02
Northeastern Washington	3.31	-2.00	4.97	-2.31	2.06	+0.41
Southeastern Washington	2.84	-3.03	5.71	-2.28	2.53	+0.36
Central Washington	5.55	-6.32	15.27	-3.43	2.79	-0.86
North Central Washington	1.65	-1.38	3.63	-1.06	0.79	-0.22
Northwest Slope Cascades	16.93	-8.11	27.13	-6.32	8.18	+0.43
Southwest Slope Cascades	11.21	-6.88	23.04	-3.09	8.04	+1.56
Blue Mountains, Oregon	2.49	-2.23	4.89	-2.32	1.47	-0.50
Lower Columbia in Oregon	3.23	-1.17	5.97	-2.21	1.30	-0.75

Northeastern Washington - Lower Spokane, Colville, Sanpoil and Lower Kettle drainages

Southeastern Washington - Touchet, Tucannon and Palouse drainages

Central Washington - Yakima, Wenatchee and Chelan drainages

North Central Washington - Methow and Okanogan drainages

Northwest Slope Cascades - Puget Sound drainages

Southwest Slope Cascades - Lower Columbia drainages

<sup>1/</sup> - Preliminary analysis by U. S. Weather Bureau from data furnished by Meteorological Services of Canada and U. S. Weather Bureau

<sup>2/</sup> - Departure from 15-year (1948-62) drainage division average

Note: Precipitation shown in inches

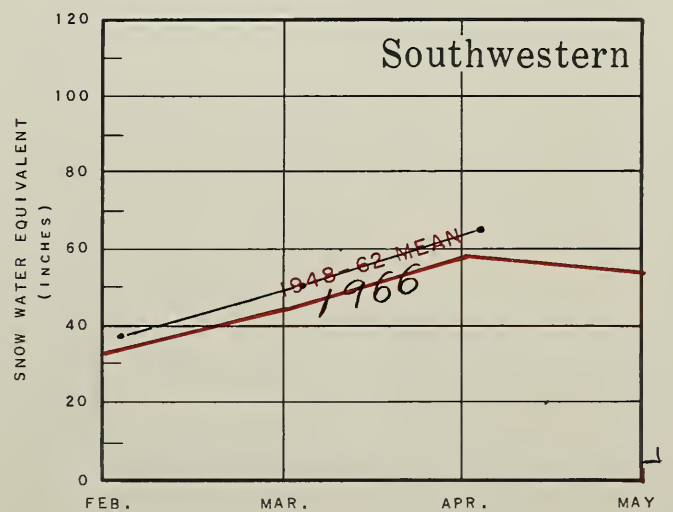
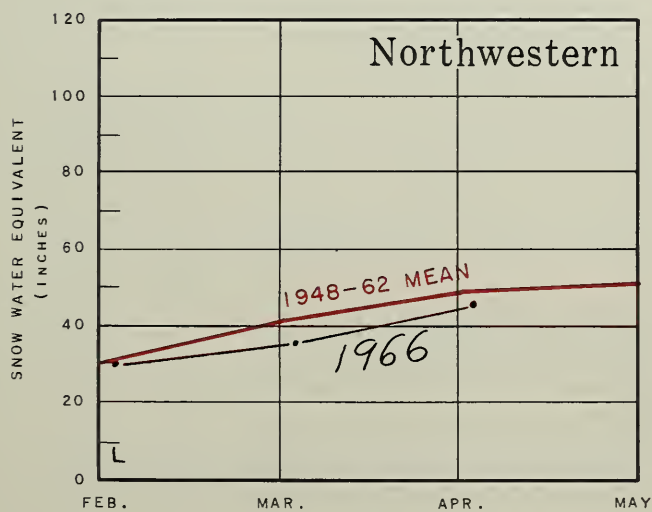
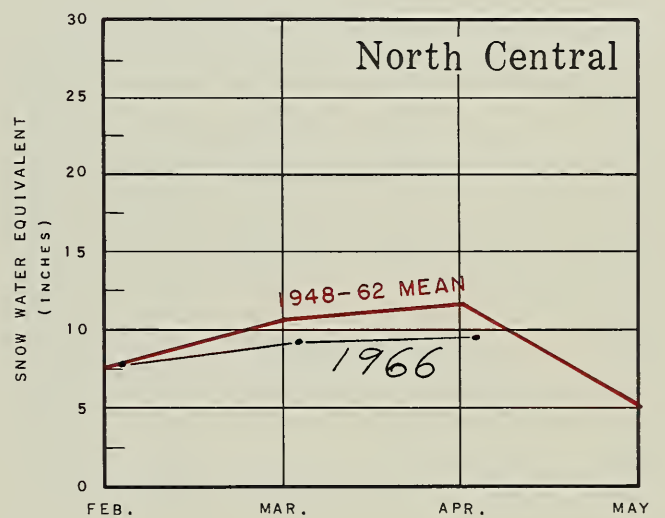
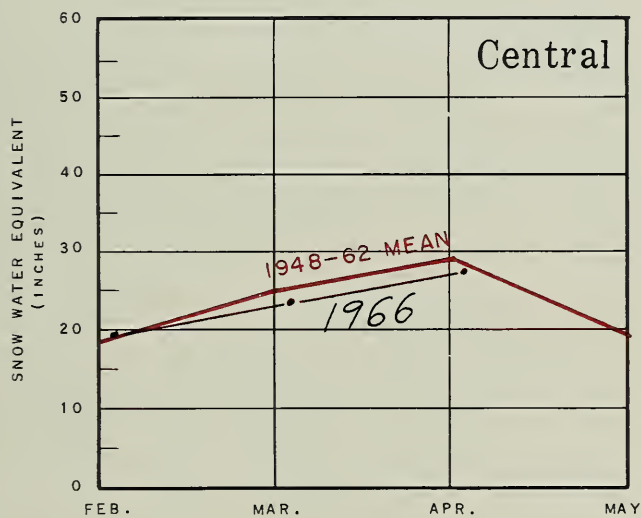
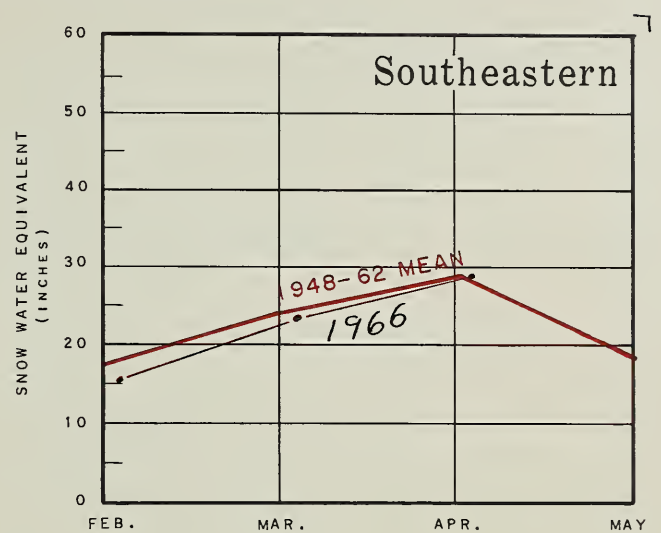
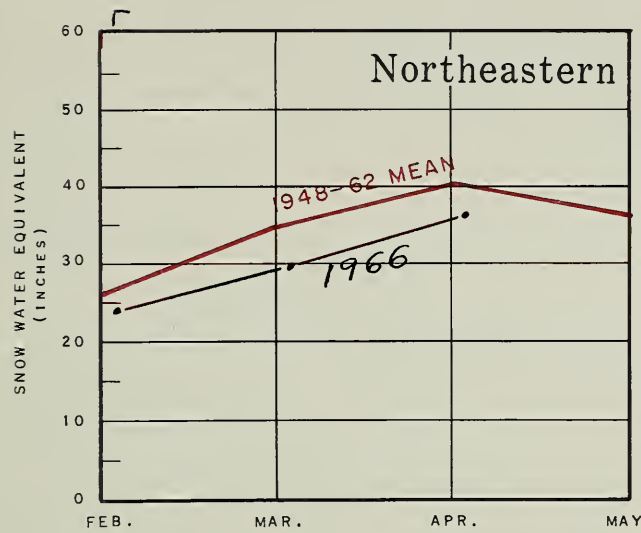




# WASHINGTON SNOW COVER

1966

## DRAINAGE AREAS

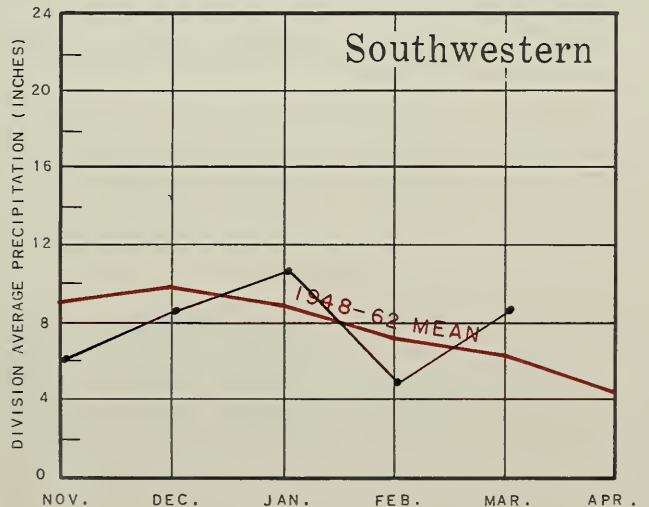
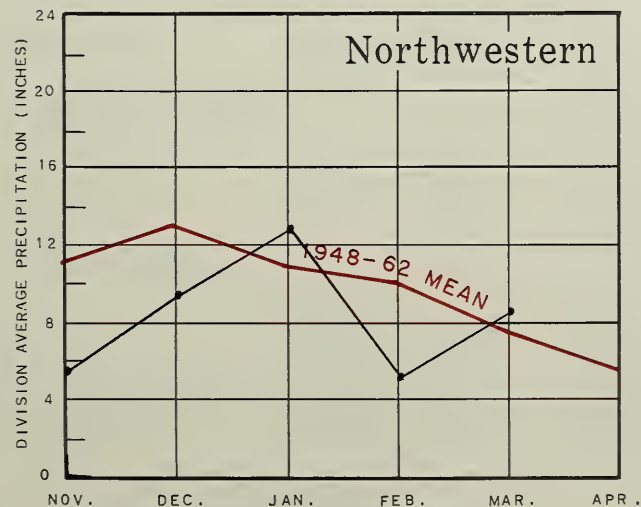
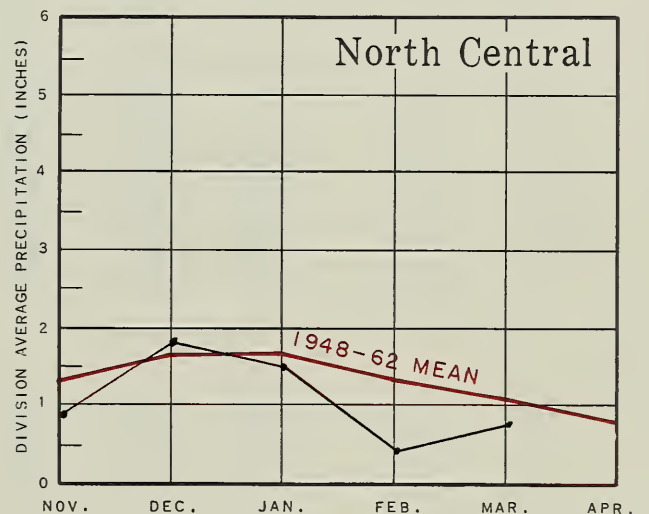
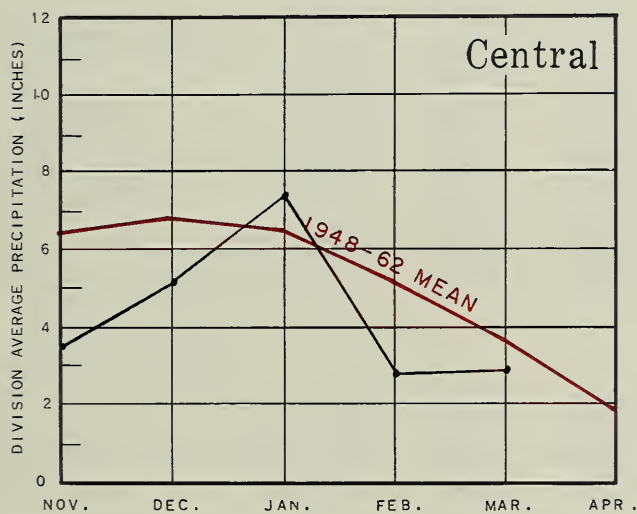
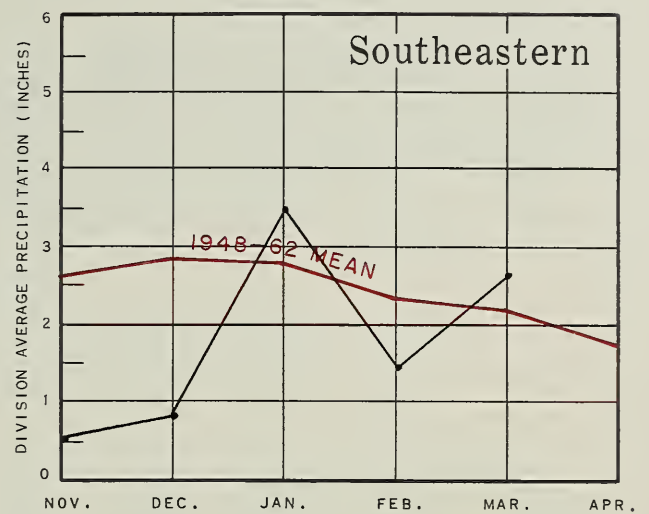
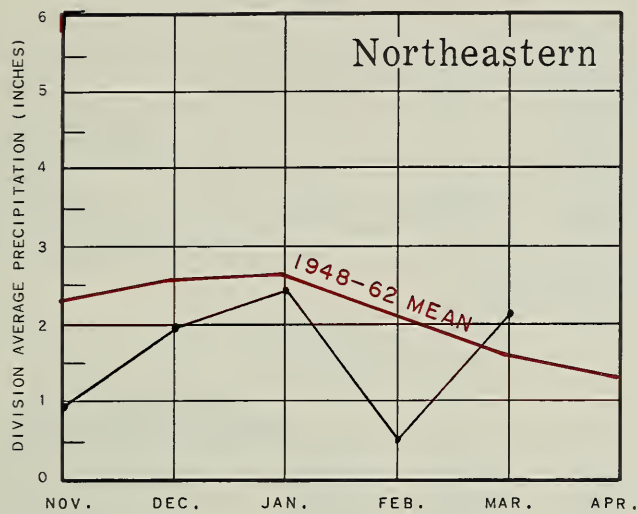




# WASHINGTON VALLEY PRECIPITATION

1965 - 1966

## DRAINAGE AREAS







# APPENDIX 1

## SNOW DATA APRIL 1, 1966

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT					
			1966		: P a s t R e c o r d			
			Date of Survey	Snow Depth (In.)	Water Content: (In.)	Water Content (In.)	1948-62 Avg.	

### MID-MONTH SURVEYS

Snow Surveys made on or about March 15, 1966

#### WENATCHEE RIVER

Leavenworth R. S.	20B17	1127	3/11	21	6.8	--	--	--
Stevens Pass	21B1	4070	3/14	119	48.0	59.0	69.8	50.4*

#### YAKIMA RIVER

Bumping Lake	21C8	3450	3/14	54	19.6	17.8	18.2	20.5*
Lake Cle Elum	21B14M	2200	3/13	32	12.4	4.8	14.1	--
#Stampede Pass	21B10	3000	3/18	113	40.5	46.8	53.1	50.1*
Tunnel Avenue	21B8	2450	3/12	68	26.0	28.1	40.4	29.6*
White Pass (E. Side)	21C28	4500	3/15	69	24.7	26.6	28.9	26.3*
White Pass (Leach Lk)	21C27	4500	3/15	83	31.4	37.1	40.0	--

#### COWLITZ RIVER

#White Pass (E. Side)	21C28	4500	3/15	69	24.7	26.6	28.9	26.3*
#White Pass (Leach Lk)	21C27	4500	3/15	83	31.4	37.1	40.0	--
Pigtail Peak	21C33	5900	3/12	140	53.8	67.4	88.0	--

#### GREEN RIVER

Stampede Pass	21B10	3000	3/18	113	40.5	46.8	53.1	50.1*
---------------	-------	------	------	-----	------	------	------	-------

#### SKYKOMISH RIVER

#Stevens Pass	21B1	4070	3/14	119	48.0	59.0	69.8	50.4*
---------------	------	------	------	-----	------	------	------	-------

#### BAKER RIVER

#Panorama	21A5	4300	3/13	231	77.8	74.3	93.0	--
Rocky Creek +	21A12A	2100	3/16	95	33.2	29.2	44.3	--
Schreibers Meadow +	21A10A	3400	3/16	186	65.1	55.9	79.8	--
Watson Lakes +	21A8A	4500	3/16	174	60.9	65.4	85.5	--

\* Adjusted 1948-62 average

# Not directly on this drainage

+ Snow water equivalent estimated from aerial stadia observations





# APPENDIX 2

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT					
			Date of Survey	1966		: P a s t   R e c o r d		
				Snow Depth (In.)	Water Content (In.)	Water Content (In.)	1948-62 Avg.	
						: 1965	1964	

Snow Surveys made on or about March 15, 1966 (Cont.)

## NOOKSACK RIVER

Panorama	21A5	4300	3/13	231	77.8	74.3	93.0	--
----------	------	------	------	-----	------	------	------	----

## ENTIAT RIVER

Entiat Meadows +	20A33a	4800	Not Measured			New Aerial Marker		
Entiat River Trail +	20A34a	3150	3/10	72	23.8	New Aerial Marker		
Pope Ridge	20B20	4300	3/11	54	17.7	New Course		
Pugh Ridge +	20A32a	6400	3/10	85	28.0	New Aerial Marker		
Snow Brushy +	20A35a	3850	3/10	104	35.4	New Aerial Marker		
Tommy Creek +	20B21a	5300	3/10	85	28.0	New Aerial Marker		

+ Snow water equivalent estimated from aerial stadia observations



APPENDIX 3  
SNOW DATA APRIL 1, 1966

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	SNOW COVER MEASUREMENT					
			Date of Survey	1966 Snow Depth (In.)	Water Content (In.)	: P a s t   R e c o r d		
						Water Content (In.)	1948-62 Avg.	
						: 1965	1964	

U P P E R   C O L U M B I A   D R A I N A G E

PEND OREILLE RIVER

Baree Creek	15B11	5500	3/31	102	45.0	48.1	56.3	50.5
Benton Meadow	16A2	2344	4/1	8	2.8	8.1	7.9	3.3
Benton Spring	16A3	4900	4/1	48	19.0	19.7	24.0	22.9
Boyer Mountain	17A2	5250	3/28	68	26.0	32.4	32.4	29.8
Brush Creek	14A4	5000	3/29	34	11.4	13.9	13.4	14.3*
Bunchgrass Meadow	17A1	5000	3/28	73	28.9	34.2	34.4	32.0
#Chewelah	17A4	4925	3/30	56	21.6	23.2	22.8	20.0*
Hoodo Creek	15C1	6200	3/31	104	42.6	55.6	49.8	53.4
Lookout	15B2	5250	3/31	87	34.3	41.0	41.6	40.5
Mosquito Ridge +	16A4A	5100	3/30	99	39.0	42.2	48.1	41.2
Nelson	Canada	3050	3/30	53	19.9	18.9	19.4	17.8
Smith Creek	16A1	4800	3/31	110	47.4	51.3	57.7	50.9
Schweitzer Bowl	16A6	4500	3/28	83	34.2	33.0	32.8	--
Schweitzer Ridge	16A5	6100	3/28	127	48.8	48.8	55.8	--
Winchester Creek	17A3	2970	3/29	34	13.2	15.7	15.9	11.9*

KETTLE RIVER

Barnes Creek	Canada	5300	4/31	55	23.5	23.9	22.9	20.7**
Big White Mtn	Canada	5500	3/29	46	15.8	New Course		
Boulder Road	18A2	1450	3/29	5	2.5	--	4.9	--
Butte Creek	18A3	4070	3/29	26	8.4	12.1	9.6	--
Cabin Creek	18A8	3170	3/29	25	7.8	10.5	8.8	--
Carmi	Canada	4100	4/1	11	2.3	8.5	7.7	--
Farron	Canada	4000	4/30	34	11.7	15.6	14.7	15.6
Goat Creek	18A4	3595	3/29	14	5.6	6.1	7.6	--
Lower Trapping Cr.	Canada	3050	3/30	7	2.3	New Course		
Monashee Pass	Canada	4500	4/29	37	14.2	17.1	17.3	13.4*
Old Glory Mtn	Canada	7000	4/1	77	29.1	--	32.7	27.5**
Snow Caps Creek	18A5	2150	3/29	0	0.0	4.2	4.5	--
Snow Caps Trail	18A6	2720	3/29	15	5.7	6.7	6.7	--
Summit G. S.	18A7	4600	3/29	24	7.1	11.6	8.8	--
Upper Trapping Cr.	Canada	5500	3/29	23	7.7	New Course		

+ Snow water equivalent estimated from aerial stadia observations

# Not directly on this drainage

\* Adjusted 1948-62 average

\*\* Average for years of record





## APPENDIX 4

DRAINAGE BASIN and SNOW COURSE			SNOW COVER MEASUREMENT					
			Date of Survey	1966	: P a s t   R e c o r d			
				Snow Depth (In.)	Water Content: (In.):1965	Water Content (In.)		
						1964	1948-62 Avg.	
<u>COLVILLE RIVER</u>								
Baird	17A6	3215	3/28	18	6.5	10.0	11.4	--
Carlson	18A9	2885	3/29	4	1.4	5.4	5.7	--
Chewelah	17A4	4925	3/30	56	21.6	23.2	22.8	20.0*
Stranger Mountain	17A5	4990	3/31	44	16.9	19.7	18.2	--
Togo	18A10	3370	3/29	37	14.1	15.7	16.4	--
<u>SPOKANE RIVER</u>								
Above Burke	15B8	4100	3/23	71	26.7	27.0	30.5	22.5
Above Roland	15B7	4350	3/22	85	29.7	34.2	38.7	32.3
Below Roland	15B6	3770	3/22	43	15.2	14.7	--	15.5
Copper Ridge	16B2	4800	3/30	71	29.4	33.4	44.3	33.3
Forty-nine Meadows	15B3	5000	3/28	80	34.7	41.6	40.6	39.4
4th of July Summit	16B3	3100	3/31	23	8.1	10.2	16.8	11.2
Granite Peak	15B13A	6000	3/28	114	47.0	54.4	50.4	--
Kellogg Peak +	16B5A	5560	3/30	85	32.4	37.6	38.4	35.8*
#Lookout	15B2	5250	3/31	87	34.3	41.0	24.1	40.5
Lost Lake	15B14A	6000	3/28	127	53.6	76.3	71.7	--
Lower Sands Creek	16B1	3400	3/30	55	20.2	23.5	30.4	22.7*
Medicine Ridge	15B4A	6150	3/28	112	46.8	55.2	49.1	--
#Mosquito Ridge +	16A4A	5110	3/30	99	39.0	42.2	48.1	41.2
Outlaw Creek	15B12A	3750	3/28	48	18.0	14.9	21.9	--
Roland Summit +	15B5A	5200	3/30	67	27.7	40.7	41.6	44.7*
Sherwin	16C1	3200	4/3	28	11.3	20.4	23.0	15.8*
Sunset +	15B9A	5600	3/30	97	35.3	38.4	42.3	36.3*
<u>SANPOIL RIVER</u>								
Sherman Creek Pass	18A1	5350	3/28	49	16.5	16.8	14.8	16.0
<u>OKANOGAN RIVER</u>								
Aberdeen Lake	Canada	4300	3/31	18	5.0	5.0	7.2	7.1
Blackwall Mountain	Canada	6250	4/1	76	31.6	35.0	42.7	31.8**
Bouleau Creek	Canada	5000	3/31	25	9.5	12.4	13.7	11.8**
Brookmere	Canada	3200	3/27	27	8.6	7.8	10.8	10.1
Clark +	19A8a	7000	3/27	54	18.9	24.7	20.2	--
Copper Mountain	Canada	4300	3/25	16	5.5	4.3	7.0	6.0**

+ Snow water equivalent estimated from aerial stadia observations

# Not directly on this drainage

\* Adjusted 1948-62 average

\*\* Average for years of record





## APPENDIX 5

DRAINAGE BASIN and SNOW COURSE			SNOW COVER MEASUREMENT					
			Date of Survey	1966		: P a s t   R e c o r d		
				Snow Depth (In.)	Water Content (In.)	: Water Content (In.)		
						1965	1964	1948-62 Avg.
<u>OKANOGAN RIVER (Cont.)</u>								
Enderby	Canada	6250	3/28	95	32.3	32.8	38.9	--
#Freezeout Meadows	20A2	5000	3/28	91	43.0	34.2	34.8	35.6
Hamilton Hill	Canada	4900	3/27	39	14.8	13.2	18.1	14.3**
#Harts Pass	20A5A	6500	3/23	109	40.5	44.1	51.1	49.6*
#Horseshoe Basin +	19A5a	7000	3/28	45	16.6	15.5	13.6	--
Isintok Lake	Canada	5510	3/29	18	5.5	6.6	--	--
Lost Horse Mountain	Canada	6300	3/31	20	5.8	7.2	10.4	7.9**
#Loup Loup	19A7	4650	3/28	29	8.5	8.0	7.7	--
Lower Esperon Cr.	Canada	4270	3/28	33	11.0	New Course		
McCulloch	Canada	4200	3/30	17	5.0	7.4	8.9	6.9
Middle Esperon Cr.	Canada	4580	3/28	38	13.6	New Course		
Missezula Mountain	Canada	5100	4/1	20	6.0	6.7	10.7	7.5**
Mission Creek	Canada	6000	3/27	52	17.5	22.7	22.7	20.8
Monashee Pass	Canada	4500	3/29	37	14.2	17.1	17.3	13.4**
Mount Kobau	Canada	5950	3/30	34	11.0	New Course		
Muckamuck +	19A9a	6390	3/27	48	16.8	14.8	13.4	--
Mutton Creek No. 1	19A1	5700	3/30	38	13.8	9.8	12.0	15.3
Mutton Creek No. 2	19A4	6000	3/30	43	14.6	13.6	12.2	16.4
New Copper Mountain	Canada	4300	3/25	17	5.3	4.5	6.9	4.5**
New Penticton Reserv.	Canada	5300	3/31	15	5.8	10.7	--	--
Nickel Plate Mountain	Canada	6200	4/1	18	5.0	7.4	13.2	7.5**
Paysayten +	20A28a	4300	3/28	42	15.5	15.1	23.4	--
Penticton Reservoir	Canada	5300	3/31	15	6.2	11.6	13.2	8.5**
Postill Lake	Canada	4500	3/31	24	7.2	9.6	9.2	8.8**
#Quartette Lake	Canada	4000	3/25	43	14.1	14.8	18.1	16.1
Rusty Creek	19A3	4000	3/30	19	6.6	6.6	5.0	8.0
Salmon Meadows	19A2	4500	3/30	26	8.0	10.1	9.8	11.8
Silver Star Mtn.	Canada	6050	3/31	61	26.0	28.0	31.6	22.0**
Starvation Mtn. +	19A10a	6750	3/27	60	21.0	18.2	20.2	--
Summerland Reservoir	Canada	4200	3/26	30	9.8	9.1	12.3	9.0
Touts Coulee	19A6	2845	3/30	0	0.0	--	2.8	--
Trout Creek	Canada	4700	3/31	17	5.4	7.7	7.5	7.8
Upper Esperon Cr.	Canada	5290	3/28	51	19.2	New Course		
White Rocks Mtn.	Canada	6000	3/28	60	22.0	24.6	23.4	18.2**
<u>METHOW RIVER</u>								
Billy Goat Pass +	20A10a	6409	3/28	96	35.5	32.4	37.4	--
Dollar Watch +	20A29a	7000	3/28	69	25.5	24.8	36.3	--
Harts Pass	20A5A	6500	3/23	109	40.5	44.1	51.1	49.6*
Horseshoe Basin +	19A5a	7000	3/28	45	16.6	15.5	13.6	--

+ Snow water equivalent estimated from aerial stadia observations

# Not directly on this drainage

\* Adjusted 1948-62 average

\*\* Average for years of record





## APPENDIX 6

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	Date of Survey	SNOW COVER MEASUREMENT				
				1966	: P a s t   R e c o r d			
				Snow Depth (In.)	Water Content (In.)	: Water Content (In.) 1948-62		
						: 1965	1964	Avg.

METHOW RIVER (Cont.)

Loup Loup	19A7	4650	3/28	29	8.5	8.0	7.7	--
#Mutton Creek No. 1	19A1	5700	3/30	38	13.8	9.8	5.5	15.3
#Mutton Creek No. 2	19A4	6000	3/30	43	14.6	13.6	12.2	16.4
#Rusty Creek	19A3	4000	3/30	19	6.6	6.6	5.0	8.0
#Salmon Meadows	19A2	4500	3/30	26	8.0	10.1	9.8	11.8
War Creek Pass +	20A31a	6500	3/28	97	35.9	New Aerial Marker		

CHELAN LAKE BASIN

Lyman Lake	20A23A	5900	3/26	138	55.4	61.0	66.2	61.7
Park Creek Ridge	20A12A	4600	3/25	103	39.5	46.2	57.3	48.8
Rainy Pass	20A9	4780	3/29	82	34.9	41.5	48.0	42.5
Safety Harbor	20A30A	6300	3/30	72	27.5	30.4	27.8	--
War Creek Pass +	20A31a	6500	3/28	97	35.9	New Aerial Marker		

ENTIAT RIVER

Brief	20B19	1600	3/27	12	5.1	4.9	5.3	--
Entiat River Trail +	20A34a	3150	3/31	36	13.4	New Aerial Marker		
Pope Ridge	20B20	4300	3/28	46	17.2	New Course		
Pugh Ridge +	20A32a	6400	3/31	76	28.3	New Aerial Marker		
Snow Brushy +	20A35a	3850	3/31	84	31.2	New Aerial Marker		
Tommy Creek +	20B21a	5300	3/31	53	19.7	New Aerial Marker		

WENATCHEE RIVER

Berne-Mill Creek	21B23	2925	3/30	67	25.3	28.1	38.1	--
Blewett Pass No. 2	20B2	4270	3/31	41	18.1	18.2	20.0	18.3
Chiwaukum G. S.	20B16	1810	3/30	32	12.3	13.5	10.1	--
#Fish Lake	21B4	3371	3/28	80	32.6	34.8	41.2	38.7
Lake Wenatchee	20B5	1970	3/30	31	11.8	14.5	15.4	--
Leavenworth R. S.	20B17	1127	4/1	0	0.0	0.7	0.4	--
#Lyman Lake	20A23A	5900	3/26	138	55.4	61.0	66.2	61.7
Merritt	20B18	2140	3/30	43	16.3	17.9	20.3	--
Stevens Pass	21B1	4070	3/30	115	46.3	60.8	78.5	55.4

SQUILCHUCK CREEK

Beehive Springs	20B3	4400	3/31	26	10.3	9.2	8.6	9.0*
Scout-A-Vista	20B4	3400	3/31	20	8.5	7.8	8.5	7.6*

+ Snow water equivalent estimated from aerial stadia observations

# Not directly on this drainage

\* Adjusted 1948-62 average





## APPENDIX 7

DRAINAGE BASIN and SNOW COURSE	No.	Elev.	Date of Survey	SNOW COVER MEASUREMENT				
				1966	: P a s t   R e c o r d			
				Snow Depth (In.)	Water Content (In.)	: Water Content (In.) 1948-62		
						: 1965	1964	Avg.

STEMILT CREEK

Jump-Off	20B8	4450	3/30	28	10.8	7.6	8.4	--
Stemilt Slide	20B6	5000	3/30	38	15.2	12.8	13.2	--
Upper Wheeler	20B7	4400	3/30	26	10.6	7.4	11.9	--

YAKIMA RIVER

Ahtanum R. S.	21C11	3100	3/27	24	9.5	5.5	4.5	5.6*
Big Boulder Creek	21B9	3200	3/29	50	20.4	19.6	26.0	22.3
#Blewett Pass No. 2	20B2	4270	3/31	41	18.1	18.2	20.0	18.3
Bumping Lake	21C8	3450	3/31	49	19.8	16.3	19.8	19.3
#Cayuse Pass	21C6	5300	3/28	201	88.6	83.3	113.4	96.2
Clockum Pass	20B9	5370	4/1	44	16.5	16.7	16.1	--
Cooke Creek	20B10	4123	4/1	21	7.6	7.1	6.3	--
#Corral Pass	21B13	6000	3/26	107	40.8	43.0	52.5	45.7*
Fish Lake	21B4	3371	3/28	80	32.6	34.8	41.2	38.7
Green Lake	21C10	6000	3/25	102	39.0	32.0	40.3	33.8*
Grouse Camp	20B11	5385	4/1	43	18.8	--	15.4	--
High Creek	20B12	2930	4/1	0	0.0	--	4.7	--
Lake Cle Elum	21B14M	2200	3/27	28	10.7	4.0	10.4	8.1
Manashtash	20C1	3935	4/1	19	6.2	0.0	--	--
Morse Lake	21C17	5400	3/30	130	75.3	65.0	64.3	66.8*
Nanum	20B13	3875	4/1	26	10.3	--	10.9	--
#Olallie Meadows	21B2	3625	3/28	122	55.8	59.3	76.8	56.5
#Satus Pass	20D1	4030	3/31	45	18.9	11.2	11.9	--
#Stampede Pass	21B10	3000	3/28	104	43.1	49.5	58.3	52.9*
Trail Creek	20B14	3360	4/1	0	0.0	0.0	0.0	--
Tunnel Avenue	21B8	2450	3/31	59	25.4	28.4	42.3	29.3
Walters Flat	20B15	3360	4/1	14	6.3	--	6.5	--
White Pass (E Side)	21C28	4500	3/31	64	25.0	29.4	29.9	31.0*
White Pass (Leech L)	21C27	4500	3/29	81	32.7	34.4	38.2	--

AHTANUM CREEK

Ahtanum R. S.	21C11	3100	3/27	24	9.5	5.5	4.5	5.6*
Green Lake	21C10	6000	3/25	102	39.0	32.0	40.3	33.8*

L O W E R   C O L U M B I A   D R A I N A G EASOTIN CREEK

Spruce Springs	17C4	5700	3/25	79	28.4	34.8	--	--
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# Not directly on this drainage

\* Adjusted 1948-62 average





## APPENDIX 8

DRAINAGE BASIN and SNOW COURSE			SNOW COVER MEASUREMENT					
			1966		: P a s t   R e c o r d			
			Date of Survey	Snow Depth (In.)	Water Content (In.)	: Water Content (In.)	1948-62	
No.	Elev.					: 1965	1964	Avg.
<u>MILL CREEK</u>								
Homestead	17C1	4030	3/31	37	15.2	9.1	12.8	8.0*
Martin Springs	17C2	4400	3/31	50	20.2	17.3	19.6	17.2*
Walla Walla Div.	18D13	2400	3/28	0	0.0	0.0	0.0	0.0*
<u>KLICKITAT RIVER</u>								
Satus Pass	20D1	4030	3/31	45	18.9	11.2	11.9	--
West Fork Cabin	21C15	3000	3/29	42	15.7	9.9	5.0	--
<u>WHITE SALMON RIVER</u>								
Cultus Creek	21C12	4000	4/1	132	59.6	50.8	51.2	54.0
#Surprise Lakes	21C13A	4250	4/1	138	60.0	53.8	68.5	58.8
<u>WIND RIVER</u>								
Oldman Pass	21D19	3100	3/30	84	38.7	26.1	26.0	19.7*
<u>LEWIS RIVER</u>								
Bob's Trail	21C21	2200	4/1	58	25.9	--	23.5	--
Calamity Ridge +	22D1a	2500	3/29	35	15.7	1.4	9.6	--
Council Pass +	21C18a	4200	3/29	123	53.5	43.2	53.8	43.9*
#Cultus Creek	21C12	4000	4/1	132	59.6	50.8	51.2	54.0
Divide Meadow +	21C29a	5600	3/29	138	60.0	58.5	60.7	--
Grand Meadow	21C25	3500	4/1	82	35.2	31.0	37.2	--
Lone Pine Shelter	21C26	3800	3/28	137	63.5	42.8	49.8	--
Marble Mountain +	22C5a	3200	3/29	138	63.5	37.2	55.6	--
#Mosquito Meadows	21C19	4100	3/28	146	63.4	48.3	51.6	50.0*
New Muddy River	22C	1400	3/29	48	22.1	8.0	14.8	--
Oldman Pass	21D19	3100	3/30	84	38.7	26.1	26.0	19.7*
Smith Creek Road	22C4	2100	3/29	72	33.2	21.0	14.8	--
Spencer Meadow +	21C20a	3400	3/29	102	49.1	22.0	37.4	--
Surprise Lakes	21C13A	4250	4/1	138	60.0	53.8	68.5	58.8
Table Mountain +	21C24a	4200	3/29	136	59.1	49.5	56.5	--
Timbered Peak +	21D18a	3000	3/29	77	38.8	7.2	28.4	--

+ Snow water equivalent estimated from aerial stadia observations

# Not directly on this drainage

\* Adjusted 1948-62 average



## APPENDIX 9

DRAINAGE BASIN and SNOW COURSE			SNOW COVER MEASUREMENT					
			Date of Survey	1966		: P a s t   R e c o r d		
				Snow Depth (In.)	Water Content (In.)	: Water Content (In.)		1948-62 Avg.
						1965	1964	
No.	Elev.							
<u>COWLITZ RIVER</u>								
Cayuse Pass	21C6	5300	3/28	201	88.6	83.3	113.4	96.2
Mosquito Meadows	21C19	4100	3/28	146	63.4	48.3	51.6	50.0*
Ohanapecosh	21C32	2200	3/29	54	22.7	20.4	20.4	--
Packwood Lake	21C31	2870	3/28	46	20.3	13.9	18.6	--
Pigtail Peak	21C33	5900	3/29	133	55.2	68.5	91.2	--
Potato Hill	21C14	4500	3/28	99	42.6	34.4	38.1	35.0*
#White Pass (E Side)	21C28	4500	3/31	64	25.0	29.4	29.9	31.0*
#White Pass (Leech L)	21C27	4500	3/29	81	32.7	34.4	38.2	--
Willame Creek	21C30	3250	3/28	103	42.2	38.7	43.7	--
<u>P U G E T   S O U N D   D R A I N A G E</u>								
<u>NISQUALLY RIVER</u>								
Ghost Forest	21C4	4550	3/28	121	49.8	48.5	67.8	53.4*
Longmire	21C3	2760	3/28	42	16.2	14.7	23.8	11.1*
New Paradise Park	21C35	5500	3/28	154	63.4	New Course		
Stem Glade	21C1	5050	3/28	157	65.6	73.0	93.6	80.2*
<u>WHITE RIVER</u>								
#Cayuse Pass	21C6	5300	3/28	201	88.6	83.3	113.4	96.2
Corral Pass	21C13	6000	3/26	107	40.8	43.0	52.5	45.7*
#Morse Lake	21C17	5400	3/30	130	75.3	65.0	64.3	66.8*
White R. Camp Gr.	21C34	4000	3/29	76	32.6	New Course		
<u>GREEN RIVER</u>								
Airstrip	21B24	1800	3/29	0	0.0	0.0	5.0	--
Charley Creek	21B25	1200	3/29	0	0.0	0.0	0.0	--
Grass Mtn. No. 1	21B26	4000	3/29	79	34.0	28.0	45.3	--
Grass Mtn. No. 2	21B27	2900	3/29	86	35.7	27.3	38.0	--
Grass Mtn. No. 3	21B28	2100	3/29	13	5.2	0.0	9.7	--
Lester Creek	21B29	3100	3/29	77	30.0	28.0	37.6	--
Sawmill Ridge	21B31	4700	3/29	92	38.8	48.2	55.2	--
Stampede Pass	21B10	3000	3/28	104	43.1	49.5	58.3	52.9*
Twin Camp	21B30	4100	3/29	62	26.6	35.5	41.3	--

# Not directly on this drainage

\* Adjusted 1948-62 average





## APPENDIX 10

DRAINAGE BASIN and SNOW COURSE			SNOW COVER MEASUREMENT					
			Date of Survey	1966		: P a s t   R e c o r d		
				Snow Depth (In.)	Water Content (In.)	Water Content (In.)	1948-62 Avg.	
No.	Elev.					: 1965	1964	
<u>CEDAR RIVER</u>								
City Cabin	21B3	2390	3/28	59	25.4	25.4	37.0	21.6
Mt. Gardner	21B21	3300	3/29	63	27.0	22.0	37.0	--
Mt. Lindsay	21B16	2500	3/29	69	28.3	21.5	28.0	19.2*
Mt. Washington	21B15	3000	3/28	46	21.0	4.4	26.2	8.2*
Rex River	21B17	2400	3/28	58	26.9	36.9	3.0	22.7*
S. F. Cedar	21B6	3000	3/28	63	29.0	23.3	41.9	29.5
Tinkham Creek	21B20	3400	3/28	81	35.0	28.9	46.0	--
<u>SNOQUALMIE RIVER</u>								
Lake Elizabeth	21B19	2900	3/28	136	61.6	54.1	71.4	--
Olallie Meadows	21B2	3625	3/28	122	55.8	59.3	76.8	56.5
S. F. Tolt	21B18	1900	3/28	0	0.0	0.0	0.0	--
<u>SKYKOMISH RIVER</u>								
#Lake Elizabeth	21B19	2900	3/28	136	61.6	54.1	71.4	--
#Stevens Pass	21B1	4070	3/30	115	46.3	78.5	26.2	55.4
<u>SKAGIT RIVER</u>								
Beaver Creek Trail	21A4	2200	3/28	43	18.6	15.3	19.3	15.5
Beaver Pass	21A1	3680	3/28	91	40.0	29.8	41.8	38.4
Devils Park	20A4	5900	3/29	90	39.7	44.2	52.2	47.5*
Freezeout Cr. Trail	20A1	3500	3/28	34	13.6	14.3	15.4	15.0
Freezeout Meadows	20A2	5000	3/28	91	43.0	34.2	34.8	35.6
#Harts Pass	20A5A	6500	3/23	109	40.5	44.1	51.1	49.6*
Klesilkwa	Canada	3700	4/2	31	11.7	12.0	16.2	16.4
Lake Hozomeen	21A2	2600	3/28	33	12.2	11.5	13.8	12.1*
#Lyman Lake	20A23A	5900	3/26	138	55.4	61.0	66.2	61.7
Meadow Cabins	20A8	1900	3/29	12	5.1	12.4	11.5	8.5*
New Tashme	Canada	2500	3/31	25	9.6	13.4	15.1	11.6
Quartette Lake	Canada	4000	3/25	43	14.1	14.8	18.1	16.1*
#Rainy Pass	20A9	4780	3/29	82	34.9	41.5	48.0	42.5
Thunder Basin	20A7	4200	3/29	56	22.9	24.5	31.2	28.1

# Not directly on this drainage

\* Adjusted 1948-62 average





# Agencies Assisting with Snow Surveys

## GOVERNMENT AGENCIES

### Canada:

Department of Lands, Forests and Water Resources,  
Water Resources Service, British Columbia

### States:

Washington State Department of Conservation  
Washington State Department of Natural Resources

### Federal:

Department of the Army  
Corps of Engineers  
U. S. Department of Agriculture  
Forest Service  
U. S. Department of Commerce  
Weather Bureau  
U. S. Department of the Interior  
Bonneville Power Administration  
Bureau of Reclamation  
Geological Survey  
National Park Service

## PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.  
Pacific Power and Light Company  
Puget Sound Power and Light Company  
Washington Water Power Company

## OTHER PUBLIC AGENCIES

Okanogan Irrigation District  
Wenatchee Heights Irrigation District

## MUNICIPALITIES

City of Walla Walla  
City of Tacoma  
City of Seattle

*Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.*

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